

In re Patent Application of:

GREENBERG ET AL.

Serial No. 10/693,594

Filed: 10/24/2003

In the Claims

1. (Currently Amended) A display system comprising:
 - a lamp providing a lamp output;
 - a light integrator optically coupled to the receive the lamp output from the lamp and for providing a homogenized light output;
 - a beam splitter optically coupled to receive the homogenized light output from the light integrator and configured to provide a first light beam having a first polarization state and a second light beam having a second polarization state;
 - a first imager optically coupled to receive the first light beam and for producing a first modulated light beam, wherein the first imager is a spatial light modulator;
 - first projection optics optically coupled to receive the first modulated light beam and configured to expand the first modulated light beam to form a first display image portion;
 - a second imager optically coupled to receive the second light beam and for producing a second modulated light beam, wherein the second imager is a spatial light modulator;
 - a second polarizing beam splitter disposed
between the polarizing beam splitter and the first
spatial light modulator; and
 - a third polarizing beam splitter disposed between the
polarizing beam splitter and the spatial light
modulator, and

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second projection optics optically coupled to the second light beam and configured to expand the second modulated light beam to form a second display image portion ~~on the display screen~~, wherein the first display image portion and the second image display portion are combined at a margin to form a display.

2. (Currently Amended) The display system of claim 1 wherein ~~the beam splitter is a polarizing beam splitter, the first light beam has a first polarization state, and the second light beam has a second polarization state further comprising a half-wave retarder plate disposed between the polarizing beam splitter and the first spatial light modulator.~~

3. (Original) The display system of claim 2 wherein the polarizing beam splitter is a wire-grid polarizing beam splitter.

4. (Currently Amended) A display system comprising:
a lamp providing a lamp output;
a light integrator optically coupled to the lamp output from the lamp and providing a homogenized light output;
a beam splitter optically coupled to the homogenized light output from the light integrator and configured to provide a first light beam and a second light beam;
a first imager optically coupled to the first light beam and producing a first modulated light beam;

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first projection optics optically coupled to the first modulated light beam and configured to expand the first modulated light beam to form a first display image portion;
a second imager optically coupled to the second light beam and producing a second modulated light beam; and
second projection optics optically coupled to the second light beam and configured to expand the second modulated light beam to form a second display image portion on the display screen, wherein the first display image portion and the second image display portion are combined at a margin to form a display image, wherein the beam splitter is a polarizing beam splitter, the first light beam has a first polarization state, and the second light beam has a second polarization state, wherein the polarizing beam splitter is a wire-grid polarizing beam splitter.
~~The display system of claim 2 wherein the first imager is a first liquid-crystal-on-silicon spatial light modulator and the second imager is a second liquid-crystal-on-silicon spatial light modulator, and further comprising:~~

~~a half-wave retarder plate disposed between the polarizing beam splitter and the first liquid-crystal-on-silicon spatial light modulator;~~

~~a second polarizing beam splitter disposed between the half-wave retarder plate and the first liquid-crystal-on-silicon spatial light modulator; and~~

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a third polarizing beam splitter disposed between the polarizing beam splitter and the second liquid-crystal-on-silicon spatial light modulator.

5. (Original) The display system of claim 4 further comprising:

a first polarization analyzer disposed between the first liquid-crystal-on-silicon spatial light modulator and the first projection optics; and

a second polarization analyzer disposed between the second liquid-crystal-on-silicon spatial light modulator and the second projection optics.

6. (Original) The display system of claim 4 wherein the first liquid-crystal-on-silicon spatial light modulator is a first analog spatial light modulator and the second liquid-crystal-on-silicon spatial light modulator is a second analog spatial light modulator.

7. (Currently Amended) The display system of claim 4 further comprising a trapezoidal post projection lens fold mirror disposed between the first liquid-crystal-on-silicon spatial light modulator and the second liquid-crystal-on-silicon spatial light modulator, and the a display screen.

8. (Original) The display system of claim 1 wherein the first imager is a first type of imager and

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the second imager is a second type of imager different from the first type of imager.

9. (Original) The display system of claim 1 wherein the first projection optics provide a first optical path length between the light integrator and the first display image portion and the second projection optics provide a second optical path length between the light integrator and the second display image portion, the first optical path length being essentially the same as the second optical path length.

10. (Original) The display system of claim 1 further comprising a color wheel disposed between the lamp and the beam splitter.

11. (Original) The display system of claim 10 wherein the color wheel is disposed between the lamp and the light integrator.

12. (Original) The display system of claim 1 wherein the first imager generates a first number of pixels, the second imager generates a second number of pixels, and the display image has a third number of pixels essentially equal to a sum of the first number of pixels and the second number of pixels.

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13. (Original) The display system of claim 12 wherein the first number of pixels is about two million pixels and the second number of pixels is about two million pixels, the third number of pixels being about four million pixels.

14. (Currently Amended) The display system of claim 1 further comprising:

a second lamp providing a second lamp output;
a second light integrator optically coupled to the second lamp output from the second lamp and providing a second homogenized light output;

a second beam splitter optically coupled to the second homogenized light output from the second light integrator and configured to provide a third light beam and a fourth light beam;

a third imager optically coupled to the third light beam and producing a third modulated light beam;
third projection optics configured to expand the third modulated light image portion to form a third display image portion ~~on the display screen~~;

a fourth imager optically coupled to the fourth light beam and producing a fourth modulated light beam;

fourth projection optics optically coupled to the fourth modulated light beam and configured to expand the fourth modulated light beam to form a fourth display image portion ~~on the display screen~~, wherein the first display image portion, the second display

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image portion, the third display image portion, and the fourth display image portion are combined at margins to form the display image.

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (New) The display system of claim 1 further including fold mirror optically coupled to receive light from the first and second spatial light modulator and for folding the beam to be directed to a display screen.